

What is claimed is:

1. A method for performing real-time decompression and display of Huffman compressed video data, the method comprising implementing a personal computer to carry out the steps of:

receiving the video data;

searching for a frame synchronizing code on bit boundaries of the video data;

upon detecting the frame synchronizing code for a given frame in the video data, extracting a frame number, Huffman levels and corresponding intensities from the given frame;

extracting pixel data for the given frame based on the Huffman levels and corresponding intensities; and

displaying the pixel data in real time.

2. The method of claim 1, wherein the step of searching for the frame synchronizing code comprises comparing the received data against a plurality of predefined bit configurations.

3. The method of claim 2, wherein the plurality of predefined bit configurations each represent a valid synchronization code with a corresponding shift.

4. The method of claim 3, wherein the step of extracting the frame number, Huffman levels and corresponding intensities comprises the step of multiplying the video data by a power of two based on the corresponding shift.

5. The method of claim 1, wherein the step of extracting the pixel data comprises generating the Huffman codes for each frame by presetting each value in a Huffman code array to a known value, and subsequently overwriting a value for a given entry in the Huffman code array with a valid intensity when a corresponding Huffman code from the Huffman code array is extracted from the video data.

6. The method of claim 5, wherein the Huffman code array comprises  $2^n$  values, where n is equal to the number of bits in the Huffman data.

7. The method of claim 5, wherein the video data comprises high  
5 uniformity background data.

8. The method of claim 7, wherein the video data comprises telemetry data comprising stars against blackness of space.

9. The method of claim 1, wherein the video data comprises multiple  
10 channel video data and the method is carried out with respect to each channel.

10. The method of claim 1, wherein the step of displaying the pixel data includes overlaying additional data on top of the pixel data.  
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11. The method of claim 1, further comprising the step of in a case where a background within the video data has high uniformity, adjusting the intensity of at least one of the background data and target data within the background to increase contrast.  
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12. A system comprising a personal computer and machine readable code executable by the personal computer to carry out the method in accordance with claim 1.

13. A machine-readable storage medium having machine readable information stored therein for, when read and executed by a machine, carrying out the method of claim 1.  
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